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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
VOLPER, THOMAS E	
ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 12/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/500,387	LEE, TED CHONGPI	
	Examiner	Art Unit	
	Thomas Volper	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 26 July 2004 have been fully considered but they are not persuasive.

2. In response to Applicant's arguments (page 3 of "Remarks", 2nd paragraph) with respect to claim 1 and similar independent claims 4, 6, 8, and 11, the Examiner respectfully disagrees. Applicant argues that Norman does not specify the composition of the add/drop connections that are a part of the DCS (whether they are add/drop multiplexers (ADMs) or some other circuitry). Applicant also argues that the DCS and add/drop connections are managed by the DCMS, which teaches away from the Applicant's invention, wherein the add/drop elements are managed by a SONET EMS. First, Norman discloses a DCS connection including ring terminals (102), (105), and (108) (col. 6, lines 28-52). Node (23) comprises this connection of ring terminals and meets the limitation of a hybrid DCS. Node (23) is shown in detail in Figure 5. This is the same node (23) that is shown in Figure 3 comprising the same ring terminals (102), (105), and (108). Norman explicitly states, "Ring terminals 100-119 are comprised of SONET add/drop muxes (ADMs) which are well known in the art" (col. 4, lines 53-55), which verifies that the add/drop connections contained in node (23) are in fact ADM connections. Second, Norman does disclose that the switching of DCS connections is managed by a DCMS (col. 4, lines 26-38). This relates to the switching of traffic from between different rings via the add/drop ring terminals inside a particular DCS. It does not relate to the management of a particular ring terminal on its own ring. In fact,

Norman is silent to the management of the individual rings comprising ring terminals inside of a DCS. Thus, Norman cannot teach away from the present invention in the manner suggested by the Applicant.

3. In response to Applicant's arguments (page 3 of "Remarks", 3rd paragraph), also with respect to claim 1 and similar claims 4, 6, 8, and 11, the Examiner respectfully disagrees. Applicant argues that Norman does not teach or suggest "at least one of said plurality of DCS elements including an ADM of said plurality of ADMs that is logically coupled to said non-homogenous SONET ring network." This is exactly what Norman shows in Figure 3, as discussed above. Figure 3 shows a node (23), which meets the limitation of a hybrid DCS structure because it comprises an ADM of a plurality of ADMs logically coupled to a non-homogenous SONET ring network. For example, ring terminal (108) in node (23) meets the definition of an ADM of a plurality of ADMs that form a non-homogenous ring network, wherein ring terminals (109), (110), and (111) make up the remainder of that plurality and form a ring network. The ring network meets the limitation of a non-homogenous ring because at least one of the ring terminals is incorporated in a hybrid DCS.

4. In response to Applicant's arguments (page 4 of "Remarks", 2nd and 3rd paragraphs) discussing the Lee reference, the Examiner respectfully disagrees. Applicant argues, "Lee does not teach Applicant's hybrid DCS element or the management of the hybrid DCS element and the ADM elements within the hybrid DCS element by different EMSs." As mentioned above, Norman is relied upon for the teaching of a hybrid DCS element and the management of that hybrid DCS element. Norman does not teach a different EMS for managing each of the ADMs within a hybrid DCS element. Lee

teaches an EMS that manages ADMs in an optical network (col. 1, lines 25-61). It does not matter that at least one of the ADMs are incorporated in a hybrid DCS element in a combination of the references, since the EMS of Lee is only concerned about the operation of a particular ADM on its particular ring.

5. In response to Applicant's arguments (page 6 of "Remarks", 1st –3rd paragraphs) with respect to claim 13 and similar claim 17, the Examiner respectfully disagrees. As discussed above, Norman discloses that the DCMS manages the switching of traffic between ADMs on different rings at each hybrid DCS, for example node (23). Norman does not attempt to disclose means for managing the hybrid rings that include ADMs incorporated in a hybrid DCS element. Huang discloses a ring management system that meets the limitation of a SONET EMS as in the present invention (see Figure 2). Huang discloses a network of rings wherein each ring is connected to at least one other ring via a digital cross connect (DXC) (see Figure 1). Huang discloses that for each ring in a network of rings, the demand loading for that ring is periodically rebalanced by the ring management system (col. 4, lines 13-27). This demonstrates that the ring management system of Huang is capable of managing a ring network that connects to, and may switch traffic to and from, another ring network. Thus the combination of Norman in view of Huang meets all of the limitations of claim 13 and similar claim 17.

6. In response to Applicant's arguments (page 8 of "Remarks", 2nd and 3rd paragraphs) with respect to claims 14-16, the Examiner respectfully disagrees. As mentioned above, Norman does not attempt to disclose a SONET EMS for managing each ring, but discloses a DCMS for managing the switching of traffic between rings. Huang discloses this SONET EMS feature for individual ring management. As discussed

above, Huang's ring management system provides management for rings that may be connected to other rings via a digital cross connect.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman, Jr. (US 5,742,605) in view of Lee (US 6,594,236).

Regarding claims 1, 4, 6, 8, 9, 11, Norman discloses a SONET ring network including a plurality of ADMs (col. 4, lines 50-55; also see Figure 3). Norman also discloses a plurality of DCS elements wherein at least one of the plurality of DCS elements include an ADM that is logically coupled to a SONET network, said ADM being coupled to said at least one DCS by a digital link (col. 6, lines 28-65; also see Figure 5). Node (23) in Figure 5 demonstrates an input/output module of a hybrid DCS that includes at least one ADM. In addition, Norman discloses that it is well known to provide switching control for a Digital Cross-connect System (DCS) based architecture by a Digital Cross-connect Management System (DCMS) (col. 4, lines 26-38). This DCMS represents the DCS EMS of the present invention. Norman fails to disclose that the SONET ADM network elements are managed by a SONET EMS. Lee discloses an EMS that manages ADMs in an optical network (col. 1, lines 25-61). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to

use the EMS of Lee to manage the ADMs in the invention of Norman. The EMS of Lee would manage a ring as a whole, including a ring terminal inside a hybrid DCS, thus avoiding decomposing a non-homogeneous SONET ring network into one or more SONET arcs. One of ordinary skill in the art would have been motivated to do this in order to provide prompt implementation of maintenance and management of optical lines upon recognition of alarm signals.

Regarding claim 2, Norman discloses that the DCMS is connected to the DCS elements via signaling links (81). These signaling links represent a data communication network. Lee discloses that the EMS is connected to the network elements through a LAN (col. 1, lines 38-43). The LAN represents a data communication network.

Regarding claims 3, 5, 7, 10, 12, Norman discloses that broadband DCS element (310) is connected to ring terminals (102, 105 and 108) by standard fiber connections (col. 6, lines 59-65). DCS element (310) includes interface (312), which breaks down each OC-12 connection entering the element into component STS-N signals (col. 7, lines 4-10; also see Figure 6).

9. Claims 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman, Jr. (US 5,742,605) in view of Huang et al. (US 6,389,015).

Regarding claims 13 and 17, Norman discloses a SONET ring network including a plurality of ADMs (col. 4, lines 50-55; also see Figure 3). Norman also discloses a plurality of DCS elements wherein at least one of the plurality of DCS elements include an ADM that is logically coupled to a SONET network, said ADM being coupled to said at least one DCS by a digital link (col. 6, lines 28-65; also see Figure 5). In addition,

Norman discloses that it is well known to provide switching control for a Digital Cross-connect System (DCS) based architecture by a Digital Cross-connect Management System (DCMS) (col. 4, lines 26-38). The ADM coupled to the DCS represents a hybrid network structure and Figure 3 represents the DCS/SONET network of the present invention. Norman fails to disclose that ADMs used to form hybrid ring networks are decoupled from the DCS/SONET network and are managed by a SONET EMS. Huang discloses a similar DCS/SONET network to Norman in Figure 1. Huang also provides a ring management system (59) that manages those elements on ring (57) (col. 4, lines 13-27; also see Figure 2). Ring management system (59) represents the SONET EMS of the present invention. This system provides for the decoupling of ADMs from the DCS/SONET network because each element on the ring (57) is being managed per that ring. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include the ring management system in the invention of Norman to provide ring-based management in addition to DCS/SONET management with a DCMS. The ring management system of Huang would manage a ring as a whole, including a ring terminal inside a hybrid DCS, thus avoiding decomposing a non-homogeneous SONET ring network into one or more SONET arcs. One of ordinary skill in the art would have been motivated to provide management per ring in order to optimally balance each link of a ring.

10. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Norman, Jr. (US 5,742,605) in view of Huang et al. (US 6,389,015) as applied to claims 13 and 17 above, and further in view of Jakobik et al. (US 6,195,367).

Regarding claim 14, the system provide by the teaching of Norman, Jr. in view of Huang et al. provides all of the limitations of claim 14, except for inserting an additional ADM between a hybrid DCS/SONET structure and a hybrid ring. Jakobik discloses SONET nodes (2 and 3) between a DCS and a plurality of SONET rings in a DCS/SONET network (see Figure 4). In addition, Huang provides the variation of adding additional SONET nodes (37 and 38) between a DCS and a plurality of SONET rings (col. 11, lines 8-28). These SONET nodes (2, 3, 37 and 38) represent the ADMs of the present invention. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to add ADMs between the DCS and a hybrid ring in the system provided by the teaching of Norman, Jr. in view of Huang et al. One of ordinary skill in the art would have been motivated to do this in order to provide for more rings to be incorporated into the DCS/SONET network, thus increasing capacity.

Regarding claim 15, see paragraph above regarding claims 13 and 17.

Regarding claim 16, Norman discloses that broadband DCS element (310) is connected to ring terminals (102, 105 and 108) by standard fiber connections (col. 6, lines 59-65). DCS element (310) includes interface (312), which breaks down each OC-12 connection entering the element into component STS-N signals (col. 7, lines 4-10; also see Figure 6).

Conclusion

11. Any inquiry concerning this communication, or earlier communications from the examiner should be directed to Thomas Volper whose telephone number is (571) 272-3151. The examiner can normally be reached between 8:30am and 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu, can be reached at (571) 272-3155. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

Thomas E. Volper

TEV

December 16, 2004

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